

NCR: Yes / No

DQA: Date:

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION		AGAINST DEPARTMENT/PROCESS									
				Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>							
Root Cause		Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector			
Doc/Data															
Equip/Tooling															
Operator															
Material															
Setup															
Other															
Process															
Supplier															
Training															
Unapproved															
FAULT CATEGORY															
Landing Gear Bending Centre Not Concentric to O/S Cracks Crushed/Crimped. Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube				General Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/>				Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/>				Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/>		Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/>	
												<input type="checkbox"/>		Other	

Work Order ID 95649

January-16-13 8:34:52 AM

95649

Page 2

Item ID: D3997-41

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Placard

Stop

NS2

Start Date: 1/16/13

Start Qty: 10.00

10

Cust Item ID:

Required Date: 1/30/13

Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center ID

130

130

Packaging

Packaging

Operation
Description

Identify as per dwg & Stock Location

5243

Set Up/
Run Hours

0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Quality Control

Memo

0.00

10X

SP
1301-21

13/1/23 JJ

BB-01-21

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____			DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. _____	NCR No. _____		Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>		
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>		
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>		
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data										
Equip/Tooling										
Operator										
Material										
Setup										
Other										
Process										
Supplier										
Training										
Unapproved										
FAULT CATEGORY										
Landing Gear				General						
				Bending <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/>			
				Centre Not Concentric to O/S <input type="checkbox"/>	BOM/Route <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>			
				Cracks <input type="checkbox"/>	Broken/Damaged <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Weld <input type="checkbox"/>			
				Crushed/Crimped. <input type="checkbox"/>	Burrs <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>			
				Cuffs <input type="checkbox"/>	Contamination <input type="checkbox"/>	Part Moved <input type="checkbox"/>				
				Heat Treat <input type="checkbox"/>	Countersink <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>				
				Inspection Strip in Tube <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>				
				Ripples in Bend <input type="checkbox"/>	Drill Holes <input type="checkbox"/>					
				Torque Waves in Extrusion <input type="checkbox"/>	Drawing <input type="checkbox"/>					
				Turning Sequence <input type="checkbox"/>	Finish <input type="checkbox"/>					
				Wave/Twist in Tube <input type="checkbox"/>	Folio <input type="checkbox"/>					

Picklist Print

January-16-13 8:34:55 AM

Page 1

Work Order ID: 95649

95649
D3997-41

Parent Item: D3997-41

Parent Item Name: Placard

Start Date: 1/16/13

Required Date: 1/30/13

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP rev A 10.01.13 new issue Prelim EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3997-41P Placard		Purchased	No				Each	0.0000		10	**	1/30/21 (O)	

D3997-41P

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS														
			Rework <input type="checkbox"/>	Scrap <input type="checkbox"/>	Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Machining <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Finishing <input type="checkbox"/>	Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/>	Quality <input type="checkbox"/>	Other <input type="checkbox"/>
Part No. _____			Work Order Update <input type="checkbox"/>																	
NCR No. _____																				
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance			Initial Chief Eng	Action Description			Sign & Date	Verification	QC Inspector							
Doc/Data																				
Equip/Tooling																				
Operator																				
Material																				
Setup																				
Other																				
Process																				
Supplier																				
Training																				
Unapproved																				
FAULT CATEGORY																				
Landing Gear	General																			
	Bending <input type="checkbox"/>	Bend <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>						Pressure/Forced <input type="checkbox"/>										
	Centre Not Concentric to O/S <input type="checkbox"/>	BOM/Route <input type="checkbox"/>	Hardware <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>						Temperature/Cure <input type="checkbox"/>										
	Cracks <input type="checkbox"/>	Broken/Damaged <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>						Weld <input type="checkbox"/>										
	Crushed/Crimped. <input type="checkbox"/>	Burrs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>						Wrong Stock Pulled <input type="checkbox"/>										
	Cuffs <input type="checkbox"/>	Contamination <input type="checkbox"/>	Maintenance <input type="checkbox"/>	Part Moved <input type="checkbox"/>																
	Heat Treat <input type="checkbox"/>	Countersink <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>																
	Inspection Strip in Tube <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Misread <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>																
	Ripples in Bend <input type="checkbox"/>	Drill Holes <input type="checkbox"/>	Offset <input type="checkbox"/>	Other <input type="checkbox"/>																
	Torque Waves in Extrusion <input type="checkbox"/>	Drawing <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>																	
	Turning Sequence <input type="checkbox"/>	Finish <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>																	
	Wave/Twist in Tube <input type="checkbox"/>	Folio <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>																	

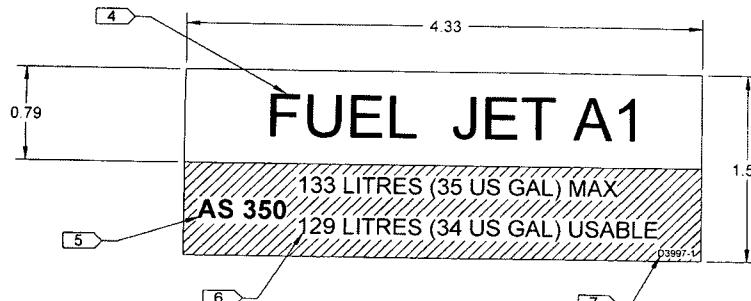
DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-1	JCA-M47-P1
D3997-3	JCA-M47-P2

PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-1	FOR AS350 AIRCRAFT - ADJACENT TO FUEL FILLER
D3997-3	FOR EC130 AIRCRAFT - ADJACENT TO FUEL FILLER

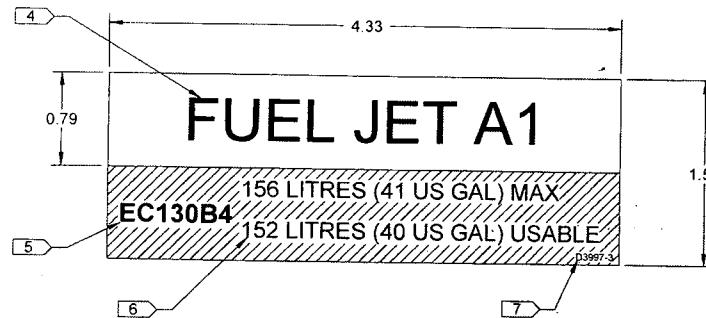
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UNCONTROLLED COPY
SUBJECT TO A JUDGMENT

NO 95649 MLS
13-01-16

13-01-16



D3997-1 PLACARD



D3997-3 PLACARD

NOTES:
1) MATERIAL: 3M 7 MIL MASKING FILM
2) TOLERANCES: PER DART QSI 018
3) UNITS: INCHES UNLESS OTHERWISE
4) 36 PT FONT, BLACK TEXT ON WHITE
5) 16 PT BOLD FONT, WHITE TEXT ON BLACK
6) 14 PT FONT, WHITE TEXT ON BLACK
7) 6 PT FONT, WHITE TEXT ON BLACK

- 1) MATERIAL: 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #203
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
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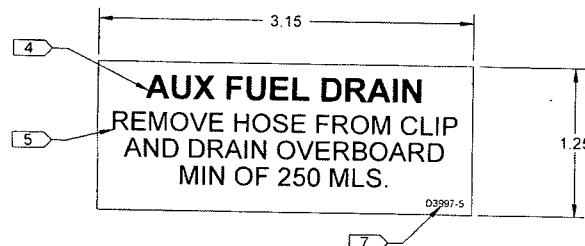
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CHECKED	DRAWING NO.		REV. A
MFG. APPR.	D3997		SHEET 1 OF 6
APPROVED	TITLE		SCALE
DE APPR.	PLACARD		NTS
DATE	09.10.05		

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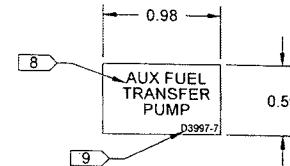
95649

DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-5	JCA-M47-P3
D3997-7	JCA-M47-P4
D3997-9	JCA-M47-P5
D3997-11	JCA-M47-P6

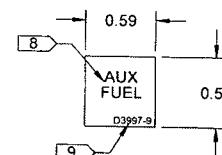
PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-5	ON TANK ADJACENT TO FUEL DRAIN
D3997-7	ADJACENT TO PUMP SWITCH ON INSTRUMENT PANEL
D3997-9	IN AIRCRAFT SWITCH PANEL
D3997-11	ON TANK OUTBOARD SURFACE



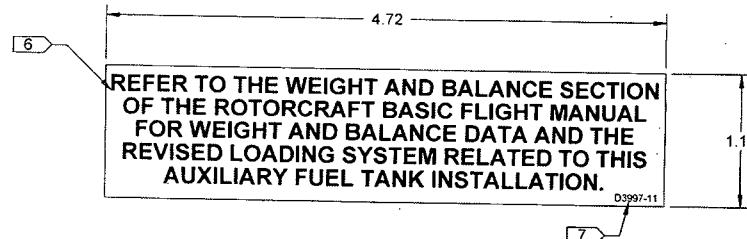
D3997-5 PLACARD



D3997-7 PLACARD



D3997-9 PLACARD



D3997-11 PLACARD

RELEASED
R 2010-01-11
JMP

NOTES:

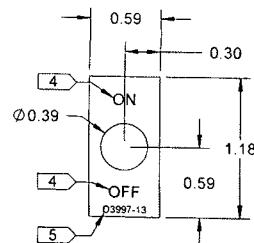
- 1) MATERIAL: 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #2031
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) 20 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 5) 16 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 6) 14 PT BOLD FONT, BLACK TEXT ON WHITE BACKGROUND
- 7) 6 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 8) 10 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 9) 6 PT FONT, WHITE TEXT ON BLACK BACKGROUND

DESIGN	<i>AB</i>	DART AEROSPACE LTD	
DRAWN	<i>AB</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>AB</i>	DRAWING NO. D3997	
MFG. APPR.	<i>AB</i>	REV. A	
APPROVED	<i>AB</i>	SHEET 2 OF 6	
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DATE 09.10.05		PLACARD	NTS

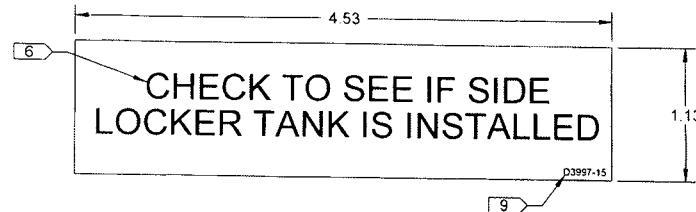
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DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-13	JCA-M47-P7
D3997-15	JCA-M47-P8
D3997-17	JCA-M47-P9
D3997-19	JCA-M47-P10

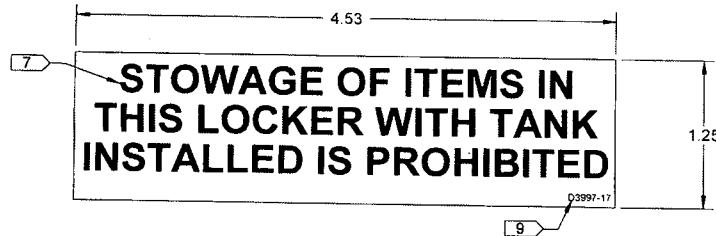
PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-13	AROUND FUEL PUMP ON/OFF SWITCH
D3997-15	ON BAGGAGE LOCKER OUTER SURFACE BELOW RELEASE BUTTON
D3997-17	ON TANK OUTBOARD SURFACE
D3997-19	AT VENT LINE OUTLET ON AIRCRAFT



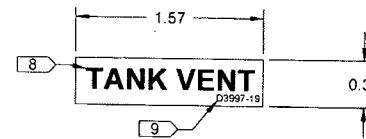
D3997-13 PLACARD



D3997-15 PLACARD



D3997-17 PLACARD



D3997-19 PLACARD

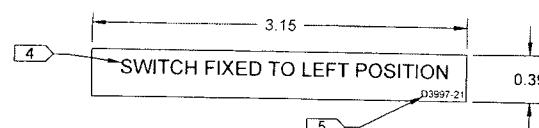
NOTES:

- 1) MATERIAL: 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #2031
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) 10 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 5) 6 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 6) 22 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 7) 24 PT BOLD FONT, BLACK TEXT ON WHITE BACKGROUND
- 8) 18 PT BOLD FONT, BLACK TEXT ON WHITE BACKGROUND
- 9) 6 PT FONT, BLACK TEXT ON WHITE BACKGROUND

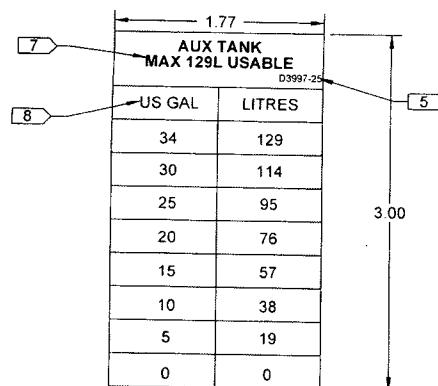
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MFG. APPR.	<i>AB</i>	D3997	SHEET 3 OF 6
APPROVED	<i>AB</i>	TITLE	SCALE
DE APPR.	<i>AB</i>	PLACARD	NTS
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95649

DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-21	JCA-M47-P13
D3997-23	JCA-M47-P14
D3997-25	JCA-M47-P15
D3997-27	JCA-M47-P16



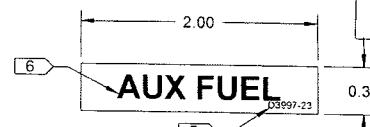
D3997-21 PLACARD



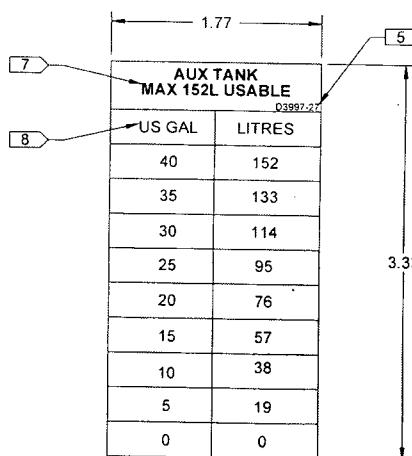
D3997-25 PLACARD

NOTES:
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2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
3) UNITS: INCHES UNLESS OTHERWISE NOTED
4) 12 PT FONT, WHITE TEXT ON BLACK BACKGROUND
5) 6 PT FONT, WHITE TEXT ON BLACK BACKGROUND
6) 20 PT BOLD FONT, WHITE TEXT ON BLACK BACKGROUND
7) 10 PT BOLD FONT, WHITE TEXT ON BLACK BACKGROUND
8) 10 PT FONT, WHITE TEXT ON BLACK BACKGROUND

PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-21	ON AUX FUEL GAUGE SWITCH PLATE
D3997-23	ON AUX FUEL GAUGE
D3997-25	NEXT TO AUX FUEL GAUGE (AS 350 ONLY)
D3997-27	NEXT TO AUX FUEL GAUGE (EC 130 ONLY)



D3997-23 PLACARD



D3997-27 PLACARD

RELEASED
2010-01-11
M

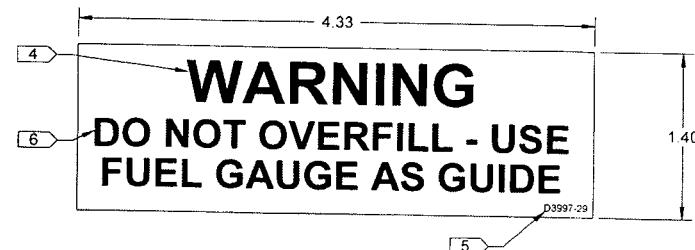
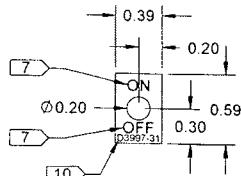
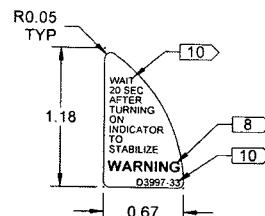
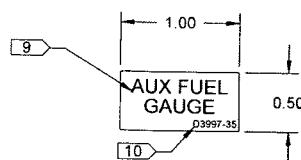
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DRAWN	15	HAWKESBURY, ONTARIO, CANADA
CHECKED	15	REV. A
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APPROVED	15	SHEET 4 OF 6
DE APPR.	15	TITLE
DATE	09.10.05	SCALE
		NTS

PLACARD

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DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-29	JCA-M47-P17
D3997-31	JCA-M47-P18
D3997-33	JCA-M47-P19
D3997-35	JCA-M47-P20

PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-29	ADJACENT TO FUEL FILLER
D3997-31	AROUND AUX FUEL GAUGE ON/OFF SWITCH ON INSTRUMENT PANEL
D3997-33	ON AUX FUEL GAUGE COVER
D3997-35	ADJACENT TO AUX FUEL GAUGE ON/OFF SWITCH ON INSTRUMENT PANEL

D3997-29 PLACARDD3997-31 PLACARDD3997-33 PLACARDD3997-35 PLACARD

NOTES:

- 1) MATERIAL: 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #2031
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) 36 PT BOLD FONT, RED TEXT ON WHITE BACKGROUND
- 5) 6 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 6) 24 PT BOLD FONT, BLACK TEXT ON WHITE BACKGROUND
- 7) 10 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 8) 9 PT BOLD FONT, WHITE TEXT ON BLACK BACKGROUND
- 9) 12 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 10) 6 PT FONT, WHITE TEXT ON BLACK BACKGROUND

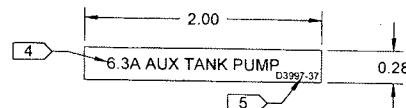
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DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	
MFG. APPR.	<i>[Signature]</i>	REV. A
APPROVED	<i>[Signature]</i>	DRAWING NO.
DE APPR.	<i>[Signature]</i>	D3997
DATE 09.10.05		SHEET 5 OF 6
PLACARD		SCALE NTS

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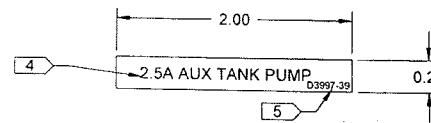
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2010-01-11
NP

DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D3997-37	JCA-M47-P21
D3997-39	JCA-M47-P22
D3997-41	JCA-M47-P23
D3997-43	JCA-M47-P24

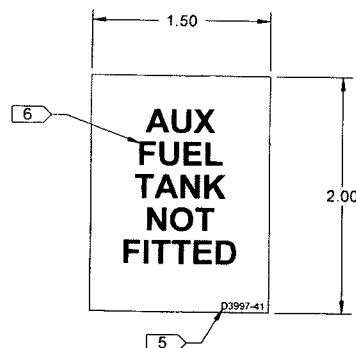
PART NUMBER	INSTALLATION INSTRUCTIONS
D3997-37	ADJACENT TO CB INSTALL
D3997-39	ADJACENT TO CB INSTALL
D3997-41	ON TANK ADJACENT TO FUEL FILLER
D3997-43	ON TANK EARTH POINT



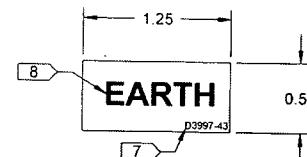
D3997-37 PLACARD



D3997-39 PLACARD



D3997-41 PLACARD



D3997-43 PLACARD

NOTES:

- 1) MATERIAL: 3M 7 MIL MASKING FILM #8522CP OR AVERY IPM #2031
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED
- 4) 10 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 5) 6 PT FONT, WHITE TEXT ON BLACK BACKGROUND
- 6) 20 PT BOLD FONT, WHITE TEXT ON BLACK BACKGROUND
- 7) 6 PT FONT, BLACK TEXT ON WHITE BACKGROUND
- 8) 20 PT BOLD FONT, BLACK TEXT ON WHITE BACKGROUND

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO.
MFG. APPR.	<i>[Signature]</i>	REV. A
APPROVED	<i>[Signature]</i>	D3997
DE APPR.	<i>[Signature]</i>	SHEET 6 OF 6
DATE 09.10.05		TITLE PLACARD
SCALE NTS		

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RELEASED
2010-01-11
MP

Studio de Lettrage
 210 Main Street W
 Hawkesbury, Ontario K6A 2H6

INVOICE

Invoice No.: 19413
 Date: 01/18/2013
 Ship Date: 01/17/2013
 Page: 1
 Re: Order No. WO9149

Ship to:

Sold to:
Dart Aerospace Ltd
 1270 Aberdeen
 Hawkesbury, Ontario K6A 1K7

Dart Aerospace Ltd
 Hawkesbury, Ontario

Business No.:	82500 7651 RT0001					
Item No.	Unit	Quantity	Description	Tax	Unit Price	Amount
		10	D3997-7P	H	8.00	80.00
		10	D3997-15P	H	8.00	80.00
		10	D3997-21P	H	8.00	80.00
		10	D3997-31P	H	8.00	80.00
		10	D3997-35P	H	8.00	80.00
		10	D3997-39P	H	8.00	80.00
		10	D3997-41P	H	8.00	80.00
			PO # 18849			
			H - HST 13% HST			
						72.80
Studio de Lettrage HST: #825007651RT0001						
Shipped By:	Tracking Number:					
Comment:					Total Amount	632.80
Sold By:						

****Certificate of Conformity****

Customer:

Studio Lettrage

<u>Purchase Order #:</u>	<u>Packing Slip #:</u>	<u>Part #:</u>	<u>Serial #:</u>
18849	WS# 9149		

<u>Description:</u> D3997-7P / D3997-15P / D3997-21P / D3997-31P / D3997-35P / D3997-39P / D3997-41P	<u>Quantity:</u>
--	------------------

Certification:

We hereby certify that:

1. The above the listed items were manufactured, repaired and/or inspected in accordance with applicable drawings and/or specifications;
2. All work was accomplished in accordance with the Dart Aerospace Purchase Order;
3. Results of all inspections, chemical or physical tests, as well as other evidence, which shows the acceptability of raw materials, parts and/or assembly components are on file and available for inspection at any time.

Authority:

3M

APPROVAL: *Sandy Collin*

DATE:

Signature: *Sandy Collin*

18 Janvier 2013

Title: *Project coordination*



Product & Instruction Bulletin 8522

Release I, Effective September 2008

See Bulletin Change Summary and end of Bulletin

This Bulletin now includes Instruction Bulletin 4.23

Scotchcal™ Changeable Opaque Imaging Media

8522

For Thermal Inkjet Printing

Product Description

This durable, 7 mil, opaque, changeable film is optimized for use with selected thermal inkjet printers and inks. Ink dries quickly on the film. When overlaminated, it is warranted for medium term, outdoor weatherable graphics, and long term indoor graphics.

Recommended Types of Graphics and End Uses

When constructed and used as described in this Bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty. Please read the entire Bulletin for details.

- First surface images (the image is on top of the film) for opaque posters and signs, including:
 - Graphics for vans, personal vehicles, trucks and buses
 - Novelty posters
 - Retail and point-of-purchase displays
 - Information graphics such as maps and directories
 - Entertainment promotions in museums, zoos, parks, theatres, sports venues
 - Education and presentation graphics
 - Legal and courtroom exhibits
- For flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs or recommend other products.

Unsuitable End Uses for This Product

- Not for electronically cut individual letters and numbers
- Fleet applications in areas that use salt for winter road maintenance
- Application to non-warranted substrates, including wallboard
- Applications subjected to gasoline vapors or spills
- Application to corrugated or highly irregular surfaces or sharply raised areas
- Graphics applied to stainless steel, including stainless steel vehicles
- On flat surfaces with rivets, tenting of 4 to 10 mm around rivets may be expected; rivets may be cut around to eliminate tenting.
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

About Water-Based Inkjet Technology

Standard inkjet technology is water based. Water-based chemistry is susceptible to the extremes of heat and humidity. This is a factor in most product constructions on the market. Read the Fabrication, Shelf Life and Storage sections in this Bulletin. Staying in the middle of these ranges always provides optimum performance.

Compatible Products

3M Graphic Materials

For complete details about graphic construction options, recommended uses and durability, refer to the Product Bulletin for the base film or substrate (media) you are using. See **3M Related Literature** at the end of this Bulletin.

This Bulletin provides details about the base film and construction options and warranty. Additional specific information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this bulletin.

3M Graphic Materials

For complete details about graphic construction options, recommended uses and durability, refer to the Product Bulletin for the base film or substrate (media) you are using. See **3M Related Literature** at the end of this Bulletin.

Film

- 3M™ Scotchcal™ Opaque Imaging Media 8522

Overlaminate

- 3M™ Scotchcal™ Luster Overlaminate 8519
- 3M™ Scotchcal™ Matte Overlaminate 8520

Printers and Inks

HP Designjet Printers

- 2500CP and 2000CP
- 2800CP and 3800CP
- 3500CP and 3000CP
- HP Designjet 5000 and 5500
- Z6100

HP Inks

- Designjet CP Ink System UV (pigment-based)
- Designjet CP Inkjet System (imaging ink)
- HP 91 Vivera Ink System

Epson Printers

- Stylus Pro 9500
- Stylus Pro 10000 printer
- Stylus Pro 10600 printer

Epson Inks

- Archival Inks

Characteristics

These are typical values for unprocessed product; processing may change the values. Contact your 3M representative for a custom specification.

Characteristic	Description
Media	7 mil, white, opaque graphic film
Liner	Low-slipage, lay flat paper
Adhesive	Changeable, pressure sensitive
Thickness	Media with adhesive: 7.5 to 8 mil (nominal)
Warranted application substrates	See next page.
Application surfaces	Flat or simple curved surfaces, with or without rivets, used in vertical ($\pm 10^\circ$) applications (no corrugations)
Application temperature range	28° to 110°F (-2° to 43°C) (air and surface)
Removable	For up to one year; see Warranty Information

Characteristic	Description
Warranted application substrates	<p>Some substrates may "out-gas", resulting in tiny bubbles throughout the surface of the graphic. For maximum performance, be sure the substrate you select is properly cleaned and prepared as recommended by the manufacturer. See Instruction Bulletin 5.1 for additional information.</p> <ul style="list-style-type: none"> • Alodine (anodized aluminum) • Automotive panels (automotive painted steel) • Fruehauf (painted aluminum) • FRP (fiberglass reinforced plywood) • Glass • Imron® (polyurethane-painted metal panel) • Acrylic • Sintra™ board <p>Note: Use on any other substrate is strictly on a graphics manufacturer and customer test and approve basis. Test for both adhesion and removal characteristics. The plasticizer in some banner materials may migrate. This may cause the edge of the graphic to peel or lift off of the banner. For optimum performance, follow the guidelines in the section, Creating A Laminated Overlap, on page 4.</p>

Warranty Information

3M™ MCS™ Warranty Durability for Finished Graphics

The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor. **The warranties in the following table(s), given in years, are for finished graphics exposed in a vertical exposure in the United States except the Desert Southwest.** See the warranty sections following this table for additional information.

Construction (film and overlaminate on warranted substrate)	HP Printers & Inks		Epson Printers & Inks		Removal
	Outdoor	Indoor	Outdoor	Indoor	
8522/8519	3 years	5 years	2 years	5 years	1 year without chemical strippers or tools
8522/8520					

Warranty and Limited Remedy

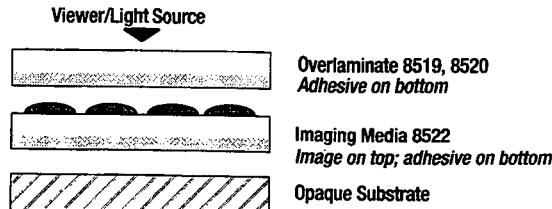
The following is made in lieu of all other express or implied warranties, including any implied warranty of **merchantability** or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade: all 3M products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

Graphic Construction Options

Opaque Graphics

Opaque graphics made with imaging media 8522 require an overlaminate and an opaque substrate.



Fabrication

Shop Temperature

Acceptable: 60° to 95°F (15° to 35°C)
Optimum: 65° to 73°F (18° to 23°C)

Shop Humidity

Acceptable: 20% to 80%
Optimum: 45% to 60%

Condition the Media Before Use

These steps are especially important if you are operating outside the conditions recommended under Fabrication, above.

- Leave the media in its original packaging until you are ready to condition and use it.
- The day before you need it, remove the media from the box and remove the plastic.
- Condition the media for 24 hours in the same environment as the printer.

Printer Settings for Optimum Quality

Refer to your Hewlett Packard printer manual for detailed operating instructions.

The quality of a printed image depends on a combination of factors: correct media selection, printing software and raster imaging processor (RIP), shop conditions, etc.

The printers qualified to use this media have print mode options that are programmed specifically for these media. Current charts that show the various modes and printing dpi, and the quality results you can expect are available at www.hp.com under the website's support section. We recommend that you print the same image at all of these settings to determine acceptable print and productivity results.

The highest quality settings are usually desirable for backlit applications.

The correct media selection makes most other necessary adjustments to the printer.

- For the HP DesignJet CP 2000 or 3000 series printers, select the **Opaque Vinyl UV** setting.
- For the HP Designjet 5000 series printers, select the **3M Changeable UV** setting or the **HP Durable Gloss UV** or **HP Colorfast Vinyl** setting.
- For the Z series printers, refer to HP's website or printer manuals.

Note: The HP printer settings lay down less ink per pass, which results in better ink absorption and quicker drying times.

- For the HP DesignJet CP 2000 or 3000 series printers, select the **Opaque Vinyl UV** setting.
- For the HP Designjet 5000 series printers, select the **3M Changeable UV** setting or the **HP Durable Gloss UV** or **HP Colorfast Vinyl** setting.
- For the Z series printers, refer to HP's website or printer manuals.

Note: The HP printer settings lay down less ink per pass, which results in better ink absorption and quicker drying times.

Drying Guidelines

Usually, the media can be laminated within 10 minutes after printing. However, especially in high humidity conditions, we recommend waiting 15 to 30 minutes before laminating.

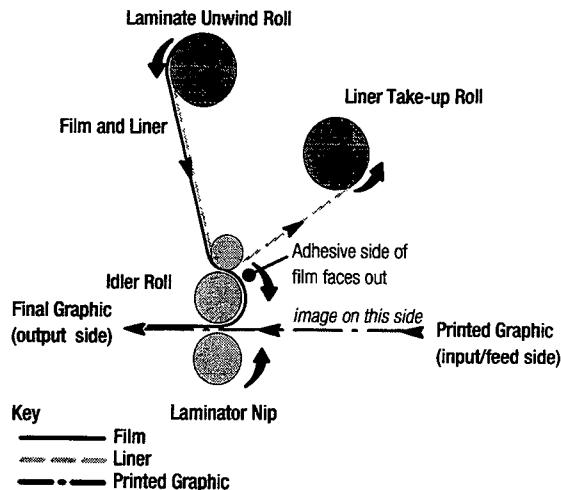
Use care when handling graphics that have not been laminated to avoid scratching and abrasion.

Graphics made with this media and ink combination typically may be wound directly on a take-up roll after printing.

Overlaminate

Whether or not you want a warranted graphic, an overlaminant is recommended to enhance durability, especially in outdoor applications.

FIGURE 1
Typical Laminator Thread-up



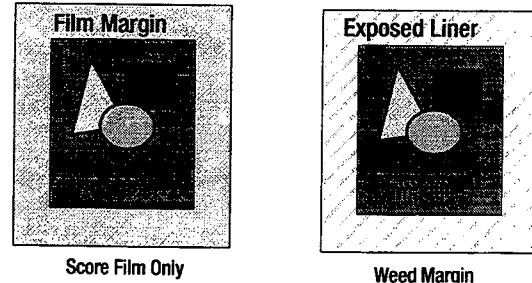
Creating a Laminated Overlap

Creating a laminated overlap helps ensure that the graphic does not peel or lift away from certain banner materials that may be subject to plasticizer migration. This method may also be used for flat, rigid or flexible sign applications.

1. Print the graphic as usual.
2. On all sides of the graphic, score the film only to the correct, final graphic dimension *without cutting through the liner*.

Weed away the excess film, leaving the bare liner exposed around the graphic. See FIGURE 2.

FIGURE 2
Trim and Weed Film Margin Only



3. Laminate the graphic as usual (see page 5), making sure that at least one inch of the bare liner is covered by the laminate. See FIGURE 3.